

**Water Regulations Advisory Committee
Technical Working Group (TWG)
2nd July 2002
Room 3b, 3rd Floor, Ashdown House**

Those Present:

Members

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| Professor Swaffield (Chair) | WRAC |
| Richard Clayton | WRAC |
| Mike Rymill | WRAC |
| Andrew Hutchinson | WRAC |
| David Hodges | WRAC |
| Roger Emmet | WRAC |
| David Gibson | WRAC |
| Steve Tuckwell | Water Regulations Advisory Scheme (WRAS) |
| Kevin English | Caroma UK |
| Ed Smith | Anglian Water/Water UK |

Secretariat

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| Peter Jiggins | Martin Macdonald | Nicola Clarke | Grant Gahagan |
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Apologies

Rob Mynard

1) Introductions

a) The Chair opened the meeting and introductions were exchanged among all attendees.

2) Evolution of Regulations/Specifications (Rec.6) (WRAC TWG2002(01) see Annex 1)

a) The Group discussed how to best evolve the Regulations. Some members considered that the Regulations were designed so as to make it hard to change them. The Secretariat were asked to investigate and report back on the mechanism for changing the Regulations, which some members considered to be unclear. The point was made that one of the main aims of the Regulations was to save water. The Group felt it should therefore be possible to modify the Regulations so that the testing and acceptance of innovative water saving devices was not restricted. It was proposed that a WRAC working Group could be set up to take on the task of evolving the Regulator's Specifications.

Action: Secretariat

b) A discussion developed about European Standards and CE marking. The need to define the appropriate CE marking was acknowledged and it was proposed that EN997 and the class 2 CE marking should be followed. Members agreed that CE markings would need to be clarified for members of the public. It was pointed out that European Standards would take a long time to implement, although it was suggested that CE markings for WCs were not far away.

c) The Group decided that a list was needed of specific issues that might warrant changing the Regulations. TWG members agreed to compile a list of current problems with the Regulations and Specifications and report back to the Secretariat before the next meeting. The Secretariat would assemble this data to enable the Group to consider whether changes were necessary and how these might be achieved.

Action: TWG & Secretariat

3) Retrofitted dual flush devices

- a) Members discussed the current situation regarding the retrofitting of dual flush devices into single flush WCs. It was generally agreed that such devices could work well in toilets of a higher flush volume (7.5ltr+). The Group agreed that all the products for retrofitting would need to be thoroughly tested in an 'in situ' environment. Any request for changes to the Regulations via a relaxation would require a formal letter from WRAS. WRAS indicated their intention to write to the Secretariat to request a relaxation to allow the retrofitting of dual flush mechanisms.

Action: WRAS

- b) Interruptible flush mechanisms were then discussed. The Group felt that one of the main concerns with these devices was the likelihood of blocked drains due to insufficient water behind the solid causing it not to clear the pipe. It was pointed out that people's behaviour must also be taken into consideration. There were limits to how far people would adapt their behaviour in order to save water; most people wanted 'fit and forget' systems. Any such system would need to be tested for customer acceptability. The Group agreed that in the absence of firm data to the contrary there should be no change in the Regulations with regards to interruptible flush devices.

4) Approval of products against the Regulations/Specifications (Rec.7) (WRAC TWG 2002(03) see Annex 3)

- a) The discussion moved to the self-certification of products by manufacturers. It was noted that third-party certification was allowed in Australia where manufacturers' testing facilities were regularly inspected. It was agreed that test facilities should be checked on a frequent basis. Members also agreed that if two different institutions tested a product, they should both attain the same results. It was pointed out that an acceptable approach would need to fit in with the rest of Europe. WRAS agreed to produce a note on self-certification for distribution to all members in advance of the next meeting of the TWG.

Action: WRAS

5) Point of sale control

- a) The Group discussed the feasibility of the introduction of point of sale control and accepted that it could not happen immediately.
- b) Other options were discussed including labelling of products with the aim of protecting the consumer with information. If consumers were aware of a labelling system to signify water efficiency they would be able to make an informed choice. Australia was used as an example of where labelling of WCs had successfully raised the bar for manufacturers. Now all manufacturers there had to achieve the highest standards of water efficiency in order to be competitive in the marketplace. The Secretariat agreed to report back to WRAC about what the National Water Conservation Group was doing about introducing product labelling. In the longer term a separate review would be needed to look at equivalent possibilities across other water fittings.

Action: Secretariat

6) Date of next meeting

- a) The next meeting will take place on 2nd September 2002, in Room 5, 2nd floor, Ashdown House, London.

7) Any other business

- a) The Chair had received a query by email regarding the Regulations and Microshowers. The Group agreed that these were not permitted under the Regulations, as the showerhead on this particular

model could become contaminated with faecal matter. The Chair agreed to forward the letter to WRAS who would advise the correspondent accordingly.

Action: Chair, WRAS

- b) A member queried the exact definition of an approved test house in the Department's guidance document. The Secretariat undertook to look into this and report back.

Action: Secretariat

WRAC Secretariat
July 2002

Annex 1

Water Regulations Advisory Committee

Technical Working Group

Evolution of the Regulations and Regulator's Specifications

Overview

1. This paper sets out the options available for dealing with innovative products and any anomalies that might arise under the Water Supply (Water Fittings) Regulations. These range from adopting issue specific solutions to the development of a more general mechanism to enable the evolution of the Regulations.

Quantifying the issue

2. There are several potential issues to consider:
 - a. An innovative product for which no standard or means of testing its compliance with the Regulations exists;
 - b. An innovative product that is currently prohibited by the Regulations;
 - c. An anomaly in the Regulations, Specification or Guidance.
3. There is a need to establish the nature and extent of these issues (both currently and likely to arise in the future) in order for the Department to consider the case for action and the most appropriate solution(s). **Members are invited to provide specific examples.**
4. In consideration of possible solutions, the Committee should bear in mind the timescales for different options, the urgency with which changes are necessary and the development of European Standards. In the future standards for water fittings will be established at the European level rather than nationally, although it will remain important that the Regulations do not act as a barrier to innovative products that deliver improved water efficiency and other benefits.

Product compliance with the Regulations

5. Regulation 4(2) provides four options for water fittings to be deemed compliant with the Regulations:

'For the purposes of this regulation, a water fitting is of an appropriate quality or standard only if –

(a) it bears an appropriate CE marking in accordance with the Directive;

(b) it conforms to an appropriate harmonized standard or European technical approval;

(c) it conforms to an appropriate British Standard or some other national specification of an EEA State which provides an equivalent level of protection and performance; or

(d) it conforms to a specification approved by the regulator.'

6. In consideration of the compliance of innovative products with the Regulations where no approval route exists (see paragraph 2a), each of these routes should be considered. While CE marking (a) and harmonized European Standards (b) are at least several years away, the European Technical Approval (b) and equivalent national specifications (c) routes are

available, but in practice have not been used in the UK. Regulator's Specifications (d) also exist for certain water fittings and Regulation 12 makes provision for the adoption of additional product specifications.

Changing Regulations/Specifications

7. In certain cases, it might be that the issue is with the existing content of the Regulations/Specifications (see paragraphs 2b and 2c), rather than the absence of an approval route. For example, the Regulations do not currently permit the installation of dual flush devices into existing WCs.
8. The mechanism for changing the content of the Regulations/Specifications already exists, essentially being the same as that to make them in the first place. Any changes would be subject to public consultation and notification to other Member States under the Technical Standards and Regulations Directive (98/34 EC), although in certain circumstances changes might be achieved through a relaxation (see paragraph 11 below). Changes to the Department's Guidance would also be subject to consultation, but should be more straightforward due to its non-statutory status.
9. When the Regulations were first introduced (3 years ago) it was envisaged that there would be a period of bedding in, during which any anomalies or implementation issues would become apparent. At some point there will be the need to review the Regulations, Regulator's Specifications and Guidance to resolve any such issues that have arisen. The timing of this will depend to some degree on the nature and extent of any problems encountered. It would not be unrealistic to assume that this process could take 1-2 years to complete.

Europe and the WC Specification

10. Since the introduction of the Regulator's Specification for WC suites, considerable work has been directed towards its incorporation into the European Standard, EN997. This will have additional implications (to be established) for any proposed changes to that document.

Relaxations

11. Regulation 11 sets out the circumstances in which certain requirements of Schedule 2 may be relaxed by the Secretary of State and the procedures for doing so. While this approach might provide a useful short-term fix in certain situations, it is doubtful whether this mechanism was ever intended as an alternative to the longer-term review and evolution of the Regulations.

WRAC Secretariat

June 2002

Annex 2**Water Regulations Advisory Committee****Technical Working Group****Approval of products against the Regulations/Specifications****Introduction**

1. This paper presents the background to and options for improving the system for certifying the compliance of water fittings with the Regulator's Specifications. The main issue (in this area) raised by the water industry in its submissions to WRAC was the lack of clarity over manufacturers' ability to self certify that WCs meet the requirements of the Regulator's Specification provided they implement a system of Factory Production Control. WRAC shared those concerns, which led to the 7th recommendation in its report:

The Regulator's Specifications detail testing to be undertaken prior to the acceptance of water fittings. It is essential that testing of particular products at different test facilities yields the same results and is based on the use of test equipment traceable to national standards.

With the exception of the WC Specification, no other Regulator's Specifications requires any form of Factory Production Control. The action required is for WRAC together with DEFRA, WRAS and manufacturers to consider the implementation of quality control mechanisms that would ensure repeatable testing to the Regulator's Specifications. This should be accomplished by December 2002.

CE marking and Levels of Attestation

2. The options for addressing this issue need to be considered in light of the development of harmonised standards across Europe. However, in the absence of harmonised European standards, European Technical Approvals (ETAs) and CE marking, the Regulator's Specifications are likely to remain of considerable importance for several years in the future. Harmonised standards are unlikely to be published before the European Acceptance Scheme (EAS) for materials testing has been agreed. Only approximately 45 ETAs have been issued in the four years of the EOTA (European Organisation for Technical Approvals for construction products) scheme. The CE mark is dependent on the production of harmonised standards or ETAs. Although CE marking will eventually replace the current UK approval system, as explained above this is unlikely in the near future. In the meanwhile, each country has its own approach to water fittings, materials and plumbing systems compliance regimes (see paragraphs 4 to 6).
3. Under the Construction Products Directive (CPD), an ETA allows a construction product with an associated Attestation of Conformity (AC) to be placed on the market with CE marking. Attestation of Conformity with a technical specification (the ETA is a technical specification) makes use of a set of methods of conformity control, the choice and combination of which give rise to six different Attestation of Conformity systems (see table below). The AC system is decided by the European Commission for each individual product or product family and given in the mandate for an ETA Guideline (ETAG). It is likely that most water fittings will eventually be given an AC of 4 requiring Factory Production Control and a minimum of a type test by the manufacturer. This is already the case for WC suites. Under this level of attestation, no specific third party testing accreditation, such as UKAS testing laboratory accreditation, is deemed necessary. Where a higher level of AC is required, the testing procedures, including

the accuracy of the testing equipment, are verified through third party certification of the Factory Production Control process. When the appropriate AC procedure is in place, the manufacturer can put the CE mark on the product.

| Attestation of conformity – Levels/systems | Certification of product conformity – Approved Body | Certification of Factory Production Control (FPC) Conformity – Approved Body | Declaration of conformity- Manufacturer | Initial Type Testing*- Manufacturer or Approved Body | Factory Production Control (FPC)- Manufacturer | Testing of samples according to Prescribed Test Plan- Manufacturer | Audit testing at factory or on market or on site- Approved Body | Initial inspection of factory & FPC- Approved Body | Continuous surveillance of FPC- Approved Body |
|--|---|--|---|--|--|--|---|--|---|
| 1+ | Yes | - | Yes | Approved Body | Yes | Yes | Yes | Yes | Yes |
| 1 | Yes | - | Yes | Approved Body | Yes | Yes | - | Yes | Yes |
| 2+ | - | Yes | Yes | Manufacturer | Yes | Yes | - | Yes | Yes |
| 2 | - | Yes | Yes | Manufacturer | Yes | Yes | - | Yes | - |
| 3 | - | - | Yes | Approved Body | Yes | - | - | - | - |
| 4 | - | - | Yes | Manufacturer | Yes | - | - | - | - |

* Not normally required under the ETA route since Initial Type Testing is already dealt with as a part of the assessment for an ETA.

There are a number of Approved Bodies already operating in the UK.

Approval practices in the UK and other countries

4. The standards for operating UK approval schemes for water fittings and materials are essentially controlled by WRAS, whereby products are tested against the Regulator's Specifications. A sample is submitted by the manufacturer or distributor and thereafter products are subject to re-approval and re-test every five years. Approved products are then listed in the WRAS Fittings and Materials Directory.
5. The common practice in other countries is to have a set of statutory national regulations and a set of local regulations/byelaws; the latter enforcing the national regulations at a local level. This is not dissimilar to the old Water Byelaws. The difference comes in that these regulations make reference to local codes or national standards for plumbing systems in buildings. In North America, for example, this would be the Plumbing Codes. If there were a similar regime in the UK, the regulations would make reference to BS 6700. This standard would, in turn, refer to performance standards such as EN 997 for WCs or local standards (for example UK Water Industry Specifications (WIS), BBA MOATS or German DVGW ZL series). Other than for the Regulator's Specifications, no other European body producing local standards is known to refer them to the European Commission for verification. In mainland Europe, agreement on local standards is invariably through a local "Board of Experts" (the members are independent but the secretariat is normally provided by the certification body) and then through national consultation for a limited period.
6. The other major difference between the UK and much of the rest of the world is that only the UK adopts a type approval scheme to a set of abridged test specifications. The other countries adopt product certification to a recognised national or local standard. A pre-requisite of all these certification schemes is Factory Production Control (FPC). CE marking also has a pre-requisite of FPC and will eventually replace the current type approval scheme in the UK.

Options for improving the quality control of UK approval systems

WRAS approval

7. WRAS had initiated a system involving a third-party test for WC manufacturers' test facilities to gain approval and entry into the Water Fittings and Materials Directory. At the time WRAC's report was written this had not received the support of any WC manufacturers. The majority of WC manufacturers have already been awarded ISO 9001 certification and section 7.6 of this standard makes reference to the need of manufacturers to ensure that all measuring equipment be calibrated or verified at specified intervals to ensure that they are traceable to national or international standards. The WRAS third-party testing scheme could therefore be considered a duplication in many cases. Acceptance of third party ISO 9001 certification could provide evidence of the test equipment being traceable to national standards. It would be useful to consider the current situation and the merits of the further promotion of this approach towards factory production control. The Group may also wish to consider whether a Factory Production Control scheme should be extended to products other than WCs.

Product labelling

8. This has previously been discussed for various water fittings, including WCs, at the National Water Conservation Group and is now an option for consideration under DEFRA's Market Transformation Programme. The benefits of this approach would include improving the water efficiency of fittings, ensuring compliance with Regulations and greater consumer information. The Working Group may wish to consider how such a scheme could be extended to those products which do not involve water efficiency but where safety may be compromised if poor quality fittings are installed e.g. safety valves such as check valves and pressure relief valves.

CE marking type scheme for attestation

9. An available option is for the UK to adopt a marking scheme including attestation conformity in advance of the practical introduction of the CE marking scheme for construction products. Attestation could be awarded on the level of risks to safety and of water wastage.

Certification of water fittings and materials

10. The Group may wish to consider the benefits of introducing the formal certification of water fittings and materials. This is the approach almost universally currently used around the rest of the world. This would involve third party testing to a national or local standard and a third party factory production control assessment.

**WRAC Secretariat/David Hodges
June 2002**

Annex 3**Water Regulations Advisory Committee****Technical Working Group****Third Party Laboratory Accreditation in Australia****Overview**

1. The following information has been prepared in order to inform the Water Regulations Advisory Committee (WRAC) of the Third Party Laboratory Accreditation system adopted successfully by the plumbing industry in Australia. As the Australian laboratory accreditation system has a proven record and as it is well accepted by industry we believe it should be considered by WRAC as a model for the development of a similar system of industry Third Party Laboratory Accreditation in the UK.

Background

2. Product approvals of water closets and other sanitaryware appliances in Australia up until 1988 were controlled mainly by Water Authorities. States such as New South Wales had up to four regulating bodies with each regulator requiring separate compliance of sanitaryware products so that the product could be installed in the particular regulator's region. All product testing and factory approval stamping was conducted and controlled by the local Water Authority.
3. In most cases, each Major Water Authority required products to be tested in their laboratory, where varying tests were conducted even though the product had been shown to pass the relevant tests previously by other Water Authorities. This testing and approval process was very inefficient for manufacturers, leading to considerable delays in gaining national approvals for plumbing products.
4. The National Certification of Plumbing and Drainage Products Scheme (NCPDP) was introduced in 1998 following a government directive to deregulate the plumbing industry in Australia. The NCPDP is administrated by Quality Assurance Services (QAS) under the principle of Third Party Accreditation on behalf of the Committee for Plumbing Products Authorization (CPPA). The CPPA is a working group representing the Water Authorities plumbing industry and provides for licensed manufacturers to market products nationally without the need for further authorization.

NCPDP product testing requirements

5. Since its introduction, the NCPDP scheme has proven to be very successful due to industry accreditation to the various relevant ISO standards. The scheme has been put in place for manufacturers so that an authority can accept with confidence the certified plumbing product. This is achieved in the NCPDP scheme by requiring third party accreditation of the manufacture's manufacturing process to the relevant ISO 9000 quality management system.
6. The NCPDP scheme also requires that product testing must be conducted by an independent laboratory or testing house. Test facilities must either have accreditation from the National Association of Testing Authorities (NATA) or be acceptable to Standards Australia. The test product must be selected by Standards Australia staff for tests witnessed by them in the accredited laboratory.

Caroma NATA Australian laboratories

7. Caroma has two active NATA accredited laboratories located at the Adelaide and Sydney Research & Development facilities. Both laboratories are NATA accredited to conduct Australia Standard and International Standard tests, which include WRAS testing procedures.

NATA

8. The following is an extract from *About NATA and Accreditation*

NATA is recognised as the largest and most diverse laboratory accreditation body in the world. Laboratory accreditation also represents NATA's largest accreditation activity with over 2500 sites holding accreditation. 40 of these are located overseas.

Laboratory accreditation provides a means by which recognition is given to the competence of testing and calibration laboratories. NATA accredits laboratories in the fields of Acoustic and Vibration Measurement, Biological Testing, Chemical Testing, Construction Materials Testing, Electrical Testing, Forensic Science, Heat and Temperature Measurement, Information Technology, Mechanical Testing, Metrology, Non-destructive Testing, Optics and Radiometry and Veterinary Testing.

From September 2000, NATA will begin to accredit laboratories against criteria based on ISO/IEC 17025:1999 *General requirements for competence and testing laboratories*. Accreditations up to this time have been carried out against NATA's *General Requirements for Registration 1992* which was based on ISO/IEC Guide 25, The precursor to ISO/IEC 17025.

NATA laboratory requirements

9. The following requirements for NATA accredited laboratories are :-

- a) Regular scheduled audits once every two years witnessed by a NATA representative and an independent NATA accredited industry representative from a similar field.
- b) The lab is audited to the Laboratory Quality Manual and includes:-
 - The checking and calibration of the laboratories testing equipment.
 - The witnessing of the performance testing required by the appropriate Australian or Overseas Standards.
 - The issuing of non-conformance reports and the timetable for addressing any non-conforming items.
 - Comparison testing between the Caroma Wetherill Park and Norwood NATA accredited laboratories.
 - Other important areas to be checked include: Document control; control of records; internal audits and management reviews.
- c) All equipment is calibrated by external NATA accredited laboratories and NATA endorsed certificates are supplied with each calibration.

NATA test reports

10. The following procedures must be followed when issuing NATA endorsed product test reports for product certification.

- a) After testing a sample, a test report is generated. Each report is checked and signed by a NATA approved signatory.
- b) A hardcopy of report is then sent to the Quality Assurance Services (QAS).

- c) QAS adds the product to the approved product list and sends a copy to the CPPA and back to Caroma.

Kevin English
June 2002